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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO (Modified)				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/904,175
				Filing Date	July 11, 2001
				First Named Inventor	Doung et al.
				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
Sheet	1	of	7	Attorney Docket Number	A-68718-3/RFT/RMS/RMK

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
✓	A1	2,905,539	09-22-1959	Bowerman	
	A2	4,415,732	11-15-1983	Caruthers et al.	
	A3	4,713,347	12-15-1987	Mitchell et al.	
	A4	4,735,907	04-05-1988	Schaeffer et al.	
	A5	4,819,658	04-11-1989	Kolodner	
	A6	4,877,830	10-31-1989	Dobell et al.	
	A7	4,920,047	04-24-1990	Giaever et al.	
	A8	5,032,216	07-16-1991	Felten	
	A9	5,106,751	04-21-1992	Newman	
	A10	5,110,745	05-05-1992	Kricka et al.	
	A11	5,156,810	10-20-1992	Ribi	
	A12	5,192,507	03-09-1993	Taylor et al.	
	A13	5,200,471	04-06-1993	Coleman et al.	
	A14	5,238,808	08-24-1993	Bard et al.	
	A15	5,259,926	11-09-1993	Kuwabara et al.	
	A16	5,262,035	11-16-1993	Gregg et al.	
	A17	5,296,375	03-22-1994	Kricka et al.	
	A18	5,304,487	04-19-1994	Wilding et al.	
	A19	5,308,754	05-03-1994	Kankare et al.	
	A20	5,320,725	06-14-1994	Gregg et al.	
	A21	5,324,457	06-28-1994	Zhang et al.	
	A22	5,438,607	08-01-1995	Przygoda, Jr. et al.	
	A23	5,486,335	01-23-1996	Wilding et al.	
	A24	5,491,097	02-13-1996	Ribi et al.	
	A25	5,498,392	03-12-1996	Wilding et al.	
	A26	5,512,131	04-30-1996	Kumar et al.	
	A27	5,585,069	12-17-1996	Zanzuchhi et al.	
	A28	5,585,646	12-17-1996	Kossovsky	
	A29	5,587,128	12-24-1996	Wilding et al.	
	A30	5,593,838	01-14-1997	Zanzucchi et al.	
	A31	5,603,351	02-18-1997	Cherukuri et al.	
	A32	5,632,876	05-27-1997	Zanzucchi et al.	
	A33	5,635,358	06-03-1997	Wilding et al.	
	A34	5,637,469	06-10-1997	Wilding et al.	
A35	5,638,876	06-17-1997	Shimotoyodome et al.		

Examiner Signature		Date Considered	1/02
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/904,175
				Filing Date	July 11, 2001
				First Named Inventor	Doung t al.
				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
Sheet	2	of	7	Attorney Docket Number	A-68718-3/RFT/RMS/RMK

U.S. PATENT DOCUMENTS					
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M	A36	5,643,738	07-01-1997	Zanzucchi et al.	
	A37	5,681,484	10-28-1997	Zanzucchi et al.	
	A38	5,726,026	03-10-1998	Wilding et al.	
	A39	5,747,169	05-05-1998	Fan et al.	
	A40	5,755,942	05-26-1998	Zanzucchi et al.	
	A41	5,763,191	06-09-1998	Knoll et al.	
	A42	5,770,029	06-23-1998	Nelson et al.	
	A43	5,783,056	07-21-1998	Hampp et al.	
	A44	5,795,953	08-18-1998	Kim et al.	
	A45	5,834,224	11-10-1998	Ruger et al.	
M	A46	5,874,316	02-23-1999	Cornell et al.	
	A47	5,876,926	03-02-1999	Beecham	
	A48	5,922,183	07-13-1999	Rauh	
	A49	5,942,388	08-24-1999	Willner et al.	
	A50	5,942,397	08-24-1999	Tarlov et al.	
	A51	5,972,199	10-26-1999	Heller et al.	
	A52	5,989,402	11-23-1999	Chow et al.	
	A53	6,013,170	01-11-2000	Meade	
	A54	6,013,459	01-11-2000	Meade	
	A55	6,020,047	02-01-2000	Everhart	
M	A56	6,050,719	04-18-2000	Winkler et al.	
	A57	6,054,277	04-25-2000	Furcht et al.	
	A58	6,060,023	05-09-2000	Maracas	
	A59	6,090,545	07-18-2000	Wohlstadter et al.	
	A60				
	A61	6,096,273	08-01-2000	Kayyem et al.	
	A62	6,096,497	08-01-2000	Bauer	
	A63	6,096,500	08-01-2000	Oprandy et al.	
	A64	6,096,561	08-01-2000	Tayi	
	A65	6,100,045	08-08-2000	Van Es	
M	A66	6,100,099	08-08-2000	Gordon et al.	
	A67	6,132,685	10-17-2000	Kercso et al.	
	A68	6,211,356	04-03-2001	Wiessler et al.	
	A69	6,232,062	05-15-2001	Kayyem et al.	
	A70	6,232,310	05-15-2001	Hansen et al.	

Examiner Signature	<i>M</i>	Date Considered	1/04
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				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
Sheet	3	of	7	Attorney Docket Number	A-68718-3/RFT/RMS/RMK

U.S. PATENT DOCUMENTS

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M	A71	6,264,825	07-24-2001	Blackburn et al.	
	A72	6,265,155	07-24-2001	Meade et al.	
	A73	6,290,839	09-18-2001	Kayyem et al.	
	A74	6,291,188	09-18-2001	Meade et al.	
	A75	6,479,240	10-24-2002	Kayyem et al.	
	A76	6,495,323	12-17-2002	Kayyem et al.	
	A77	6,579,231	06-17-2003	Phipps	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Patent Document Country Code ² Kind Code ³ (# known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁴
M	B1	EP 0 637 996	07-23-1997	The Trustees of the University of Pennsylvania		
	B2	EP 0 637 998	07-31-1996	The Trustees of the University of Pennsylvania		
	B3	EP 0 439 036	07-31-1991	Hoffman La Roche	Abstract	
	B4	EP 0 478 319	04-01-1992	Toshiba		
	B5	EP 0 664 452 A2	07-26-1995	Boehringer Mannheim GMBH	Abstract	
	B6	WO 93/23425	11-25-1993	The Ontario Cancer Institute		
	B7	WO 95/34816	12-21-1995	Pharmacia Biosensor AB		
	B8	WO 95/35102	12-28-1995	Nexstar Pharmaceuticals, Inc.		
	B9	WO 96/10178	04-04-1996	Pharmacia Biosensor AB		
	B10	WO 96/15450	05-23-1996	David Samoff Research Center		
	B11	WO 96/15576	05-23-1996	David Samoff Research Center		
	B12	WO 96/39252	12-12-1996	David Samoff Research Center		
	B13	WO 96/39260	12-12-1996	David Samoff Research Center		
	B14	WO 98/05424	02-12-1998	Caliper Technologies Corp.		
	B15	WO 98/12539 A1	03-26-1998	Mesa Scale Technologies, LLC		
	B16	WO 97/16561	05-09-1997	David Samoff Research Center		
	B17					
	B18	WO 97/27324	07-31-1997	David Samoff Research Center		
	B19	WO 97/37755	10-16-1997	Samoff Corporation		

Examiner Signature	Date Considered	1/04
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				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
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Sheet	4	of	7		

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✓	B20	WO 97/43629	11-20-1997	Sarnoff Corporation		
✓	B21	WO 98/13683	04-02-1998	Sarnoff Corporation		
	B22					
	B23	WO 99/57317	11-11-1999	Clinical Micro Sensors		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS							
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), data, page(s), volume-issue number(s), publisher, city and/or country where published.					T ⁴
h	C1	ALEXANDER, "Design and Synthesis of Macrocyclic Ligands and their Complexes of Lanthanides and Actinides", <i>Chem. Rev.</i> , 1995, 95: 273-342.					
	C2	ANNE, A. et al., "Synthesis of first ferrocene labeled dideoxynucleotide and its use for 3' redox end labeling of 5' modified single stranded oligodeoxyribonucleotides", <i>Bioconjugate Chem.</i> , 2001, 12:396-405.					
	C3	CHAIKEN et al., "Analysis of Macromolecular Interactions Using Immobilized Ligands", <i>Analytical Biochemistry</i> , 1992, 201: 197-210.					
	C4	CHE, G. et al., "Voltammetry of defect sites at a self-assembled monolayer on a gold surface", <i>J. of Electroanalytical Chemistry</i> , 1998, 456: 9-17.					
	C5	CODINGTON et al., "Nucleosides. XIII. Synthesis of 3'-Amino-3'-deoxy-arabinosyl-uracil via 2', 3' - Epoxy-lyxosyl Nucleosides", <i>J. Org. Chem.</i> , 1962, 27:163-167.					
	C6	COLVIN et al., "Semiconductor Nanocrystals Covalently Bound to Metal Surfaces with Self-Assembled Monolayers", <i>J. Am. Chem. Soc.</i> , 1992, 114: 5221-5230.					
	C7	CONWAY, N.E. et al., "Site-specific attachment of labels to the DNA backbone", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. ed.), IRL Press, Oxford, pp. 211-239.					
	C8	DAVIS et al., "Continuous Liquid-Phase Piezoelectric Biosensor for Kinetic Immunoassays", <i>Anal. Chem.</i> , 1989, 61: 1227-1230.					
	C9	DELMARCHE, E. et al., "Immobilization of Antibodies on a Photoactive Self-Assembled Monolayer on Gold", <i>Langmuir</i> , 1996, 12: 1997-2006.					
	C10	DREYER, G.B. et al., "Sequence-specific cleavage of single-stranded DNA:Oligodeoxynucleotide-EDTA/FE(II)", <i>Proc. Natl. Acad. Sci. USA</i> , 1985, 82:968-972.					
	C11	DURHAM, B. et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives", <i>Advances in Chemistry Series</i> , 1990, 226:181-193.					
	C12	DWYER et al., "Structural Analysis of Covalent Peptide Dimers, Bis(pyridine-2-carboxamidonetropsin)(CH2) 3-6, in Complex with 5' -TGACT-3' Sites by Two Dimensional NMR", <i>J. Am. Chem. Soc.</i> , 1993, 115: 9900-9906.					
	C13	FLANAGAN et al., "Truncated staphylococcal nuclease is compact but disordered", <i>Proc. Natl. Acad. Sci. USA</i> , 1992, 89: 748-752.					
	C14	GAFNI et al., "Biomimetic Ion-Binding Monolayers on Gold and Their Characterization by AC-Impedance Spectroscopy", <i>Chem. Eur. J.</i> , 1996, 2: 759-766.					
h	C15	GAIT, M.J., "Oligoribonucleotide Synthesis", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. Ed.), IRL Press, Oxford, pp. 25-48.					

Examiner Signature		Date Considered	11/14
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
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h	C16	GAO et al., "Self-assembled conducting polymer monolayers of poly(3-octithiophene) on gold electrodes", <i>Synthetic Metals</i> , 1995, 75: 5-10.	
	C17	GASSNER et al., "A test of the 'jigsaw puzzle' model for protein folding by multiple methionine substitutions within the core of T4 lysozyme", <i>Proc. Natl. Acad. Sci. USA</i> , 1996, 93: 12155-12158.	
	C18	GILLES et al., "Single nucleotide polymorphic discrimination by an electronic dot blot assay on semiconductor microchips", <i>Nature Biotechnology</i> , 1999, 17: 365-370.	
h	C19	GLOVER et al., "Alternating current Polarography in the Harmonic Multiplex Mode", <i>Analytical Chemistry</i> , 1973, 45(11): 1869-1877.	
	C20	HAMILL et al., "The Effect of Boundry Selection on the Stability and Folding of the Third Fibronectin Type 111 Domain from Human Tenascin", <i>Biochemistry</i> , 1998, 37: 8071-7079.	
	C21	HESS et al., "Base Pairing Properties of Novel Transition-Metal PNA Conjugates", <i>Journal of Inorganic Biochemistry</i> , 1999, 74:...	
h	C22	HSUEH et al., "Electrochemically Directed Self-Assembly on Gold", <i>Angew. Chem. Int. Ed.</i> , 2000, 39(7): 1228-1230.	
	C23	JONSSON et al., "Biosensors based on surface concentration measuring devices - the concept of surface concentration," <i>Progr., Colloid & Polymer Sci.</i> , 1985, 70: 96-100.	
	C24	KIRSCHENHEUTER et al., "An Improved Synthesis of 2' -Azido-2' -Deoxyuridine", <i>Tetrahedron Letter</i> , 1994, 35(46): 8517-8520.	
	C25	KRIDER, E.S., et al., "Automated Synthesis of 3' Metalated Oligonucleotides", <i>Inorg. Chem.</i> , 2001, 40: 4002-4009.	
	C26	KRIDER, E.S. and T.J. Meade, "Electron transfer in DNA: covalent attachment of spectroscopically unique donor and acceptor complexes", <i>JBIC</i> , 1998, 3: 222-225.	
	C27	KUMAR et al., "A Simple Method for Introducing -SH/COOH Group at 5' -CH end of Oligonucleotide", <i>Nucleosides & Nucleotides</i> , 1992, 11(5): 999-1002.	
	C28	KUMAR et al., "Patterning Self-Assembled Monolayers: Applications in Materials Science", <i>Langmuir</i> , 1994, 10: 1498-1511.	
	C29	LABINIS et al., "Orthogonal Self-Assembled Monolayers: Alkanethiols on Gold and Alkane Carboxylic Acids on Alumina", <i>Reports</i> , August 25, 1989, pp. 845-847.	
	C30	LIU et al., "Passive mixing in a three dimensional serpentine microchannel", <i>J. Microelectromechanical Systems</i> , 2000, 9(2): 190-197.	
	C31	LOFAS et al., "A Novel Hydrogel Matrix on Gold Surfaces In Surface Plasmon Resonance Sensors for Fast and Efficient Covalent Immobilization of Ligands", <i>J. Chem. Soc. Chem. Commun.</i> , 1990, pp. 1526-1528.	
	C32	MCGOVERN et al., "Role of Solvent on the Silanization of Glass with Octadecyltrichlorosilane", <i>Langmuir</i> , 1994, 10: 3607-3614.	
	C33	MENGEL, R. et al., "A Simple Synthesis of 2'-Deoxy-2'-fluorocytidine by Nucleophilic Substitution of 2,2'-Anhydrocytidine with Potassium Fluoride/Crown Ether", <i>Angew. Chem. Intl. Ed. Engl.</i> , 1978, 17(7): 525.	
	C34	MILLER, N. et al., "Nucleosides. XXI. Synthesis of Some 3'-Substituted 2',3'-Dideoxyribonucleosides of Thymine and 5-Methylcytosine", <i>J. Org. Chem.</i> , Jan. 1964, 29: 1772-1776.	
	C35	MITSUMI, T. et al., "Coumarin-fluorescein pair as a new donor-acceptor set for fluorescence energy transfer study of DNA", <i>Tetrahedron Lett.</i> , 2000, 41(15): 2605-2608.	
	C36	MUCIC et al., "Synthesis and Characterization of DNA with Ferrocenyl Groups Attached to their 5'-Termini: Electrochemical Characterization of a Redox-Active Nucleotide Monolayer", <i>Chem. Commun.</i> , 1996, pp. 555-557.	

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				First Named Inventor	D ung t al.
				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
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Examiner Initials*	Citation No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T*
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	C49	SHNEK et al., "Specific Protein Attachment to Artificial Membranes via Coordination to Lipid-Bound Copper (II)", <i>Langmuir</i> , 1994, 10: 2382-2388.	
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